

**REMARKS**

Claims 1-6, 8-18, 20-24, 26-30 and 32 have been rejected under 35 USC 102 (b) over Kawai et al. It is the Examiner's position that Kawai teaches a filtration cartridge including a membrane formed of perfluorinated thermoplastic resin and that the membrane and cartridge can be configured in the specific configuration defined by the dependent claims.

Kawai et al disclose film membranes comprising particles of a tetrafluoroethylene homopolymer or copolymer (PTFE) dispersed in a filter forming polymer such as viscose. The film forming polymer then is removed from the PTFE to form a porous structure after heat treatment of the PTFE-film forming polymer composition. In contrast, applicants' membranes are formed by phase inversion.

Contrary to the Examiner's position, the Kawai et al. membranes are not formed by phase inversion. As set forth in applicants' specification at page 13, lines 7-10, applicants' invention is formed by the method set forth in U.S. Patent application 60/117,852 which was incorporated by reference. U.S. Patent application 60/117,852 was filed as PCT/US00/02198 which was published as WO 00/44484. At page 9, line 10 to page 10, line 24 of the published application, the method for making the membrane is disclosed. Briefly, polymer pellets and a solvent such as chlorotrifluoroethylene oligimer (CITFE) are mixed to form a paste. (12-35wt % polymer). The membrane is formed from the paste when it is extruded and cooled by liquid-liquid phase separation rather than by liquid-solid phase separation. The paste is extruded into a cool liquid bath having a temperature lower than the upper critical solution temperature of the polymer paste. Upon cooling, the solution undergoes liquid-liquid phase separation. In a subsequent step, the dissolution solvent (CITFE) is removed by extraction and the resultant membrane is dried under restraint. In contrast, in the Kawai et al.

process, there is no phase separation of a paste either by liquid-liquid phase inversion or by liquid-solid phase inversion. In Kawai et al., one component is removed from a mixture such as by extraction with no phase separation.

Kawai et al. requires no fibrils in the membrane structure (Claim 1) while applicants' membranes are formed of fibrils, (e.g., see Fig. 7 of WO/00/4484. Thus, applicants' membranes are different from the Kawai et al. membranes in that they have different microstructures.

As set forth in applicants' specification, the Kawai et al membranes are formed by a more complex manufacturing process and are weaker (Page 5, lines 16-26). Applicants' claims are limited to membranes formed by liquid-liquid phase inversion. Accordingly, this ground of rejection should be withdrawn.

Claims 7, 19, 25 and 31 have been rejected under 35 USC 103 (a) over Kawai et al in view of EPO 125431A2. It is the Examiner's position that it would be obvious to provide the perfluorinated polymer thermoplastic support of EP'432 for the membrane of Kawai et al.

Kawai et al is discussed above. EP'432 discloses a laminated membrane construction formed of a polytetrafluoroethylene (PTFE) membrane and a porous fluorocarbon support. (PTFE) is not thermoplastic as required by applicants' claims. Thus, EP'432 does not supply the deficiencies of Kawai et al. Accordingly, this ground of rejection should be withdrawn.

In view of the above, it is submitted that applicants' claims define patentable subject matter and a Notice of Allowance to that effect is respectfully requested.

Kwok-Shung Cheng et al.  
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Amendment

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Respectfully submitted,

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